

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

10 Rec'd PCT/PTC 08 JUN 2004

To:
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PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing
(day/month/year)

27 JUN 2005

Applicant's or agent's file reference

1858-SPL

IMPORTANT NOTIFICATION

International application No.

PCT/US03/22606

International filing date (day/month/year)

18 July 2003 (18.07.2003)

Priority date (day/month/year)

18 July 2002 (18.07.2002)

Applicant

THE JOHNS HOPKINS UNIVERSITY

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1858-SPL	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/22606	International filing date (day/month/year) 18 July 2003 (18.07.2003)	Priority date (day/month/year) 18 July 2002 (18.07.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): G01N 17/04, 17/02 and US Cl.: 73/86; 204/404; 205/776.5		
Applicant THE JOHNS HOPKINS UNIVERSITY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the

PCT).

These annexes consist of a total of ___ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 05 February 2004 (05.02.2004)	Date of completion of this report 03 May 2005 (03.05.2005)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Thomas P. Noland <i>Shawn S. Hyspe</i> Telephone No. (571) 272-2202

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☒ the description:
pages 1-22 as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the claims:
pages 23-29, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☒ the drawings:
pages 1-8, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention is accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Group I, claim(s) 1, drawn to an embeddable corrosion rate meter(ECRM).

Group II, claim(s) 2-3 and 18-22, drawn to an ECRM system for detecting and measuring corrosion in metal structures or a method for detecting and measuring corrosion in a structure susceptible to corrosion.

Group III, claim(s) 4-17, drawn to an embeddable system for detecting and measuring corrosion a structure susceptible to corrosion.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I lacks unity with Groups II-III because they do not require the ECRM to be encapsulated in an aggregate-size, inert container, not bigger than about 2 cm in diameter an about 1 cm in height as in Group I and because Group I does not require the voltmeter to have an input impedance greater than a billion ohms as in Group II or to be used in a system of a plurality of ECRMs as in Group III.

Group II lacks unity with Group III because it does not require the voltmeter to have an input impedance greater than a billion ohms as in Group II as evidenced by such only being claimed in dependent claim 12 of Group III and because Group II does not require use in a system of a plurality of ECRMs as required in Group III.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. ____

V. Reasoned statement under Rule 6(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. STATEMENT**

Novelty (N)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>2-3, 12, 14-15, 18-22</u>	YES
	Claims <u>1, 4-11, 13, 16-17</u>	NO
Industrial Applicability (IA)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1, 4-11, 13 and 16-17 lack an inventive step under PCT Article 33(3) as being obvious over Jasinski in view of Srinivasan WO 02/46701. Jasinski especially in its abstract, Figs. 1 and 48 and col. 10, lines 1-31 shows an ECRM substantially as claimed but does not disclose the use of a programmable signal generating device or the use of an external read head. However such are shown to be useful in such devices by their use in the similar system system of Srinivasan especially in its abstract, Figs. 4a-5 and page 12, paragraph 49 therein and thus would have been obvious to have been incorporated into a system similar to that of Jasinski to increase variability in usage. Use of device Ids in such systems is a known expedient to aid in identification and sorting out a particular when a plurality are present. The exact type of material used in such systems would have been an obvious expedient selectable by convenience or intended use. Those claimed appear to be of known utility for such purposes. Re claim 13, obviously the data produced by the system could be graphed in any desired manner, such as that claimed.

Claims 2-3, 12, 14-15 and 18-22 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest: 1) an ECRM system for detecting and measuring corrosion in a metal structure as in claim 2 with a first selector for applying a current via a galvanostat through each of a plurality of resistances to at least one working electrode and a counter electrode and a second selector for selecting duration of a current pulse in combination with other elements structured and interacting as set forth; an embeddable system for detecting an measuring corrosion in a structure susceptible to corrosion as in claim 4 and with a second selector for selecting duration of a current pulse as in claim 12; an embeddable system for detecting an measuring corrosion in a structure susceptible to corrosion as in claim 4 and where corrosion measurements data is obtained by disconnecting the galvanostat and measuring a voltage difference between the working electrode a counter electrode as in claim 14; or a method for detecting an measuring corrosion in a structure susceptible to corrosion with a plurality of ECRMs as in claim 18 where current from a first selector is applied via a galvanostat and a second selector is used to select duration of a current pulse in a manner and in combination with other steps a set forth.

Claims 1-22 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.